

What is claimed is:

1     1. A method for extending the functionality of a message  
2     according to a predetermined message format, for use when  
3     communicating one or more messages at least in part via a  
4     wireless communication system from a sending terminal to a  
5     receiving terminal, either of which may be a mobile terminal, the  
6     message format providing a user data field, the method comprising  
7     the steps of:

8     a) determining a number of bits at the end of the user data  
9     field to be used to convey extension data;

10    b) defining the information to be conveyed by each bit;

11    c) inserting extension data into the user data field in the  
12    determined number of bits at the end of the user data field;

13    wherein the extension data includes information indicating  
14    instructions associated with displaying the message, thereby  
15    providing an extension to the messaging according to the  
16    predetermined format that is effective for mobile terminals  
17    adapted to interpret the extension data but does not prevent  
18    mobile terminals not so adapted from displaying the message  
19    without regard for the instructions indicated by the extension  
20    data.

1     2. A method as in claim 1, wherein the message format is for a  
2     message including a picture, and wherein each picture message  
3     includes a picture and possibly some associated text, and wherein  
4     the method further comprises the steps of:

5     a) inserting into the user data field at least some of the text  
6     to be associated with the picture; and

7     b) inserting at least some of the picture into the user data

8 field after the text.

1 3. The method of claim 1, wherein the predetermined message  
2 format is the short message service (SMS) picture message format.

1 4. The method of claim 3, wherein an ordered sequence of SMS  
2 picture messages is conveyed as a single message object logically  
3 organized into frames, each frame consisting of and conveyed as  
4 one or more SMS picture messages, and wherein for frames  
5 consisting of only one SMS picture message, the SMS extension  
6 data is included after the picture in the only one SMS picture  
7 message, but in each frame consisting of multiple SMS picture  
8 messages, the SMS extension data is included after the picture in  
9 the last SMS picture message of the multiple SMS picture messages  
10 making up the frame.

1 5. The method of claim 4, wherein in case a frame is conveyed by  
2 more than one SMS message, the method further comprises the step  
3 of inserting SMS message concatenation data into the user data  
4 field of each SMS message used to convey the frame so as to  
5 indicate the individual SMS messages and their order to be used  
6 to convey the frame.

1 6. The method of claim 4, wherein the SMS extension data  
2 comprises: a message identifier and also the order number or  
3 other identifier of the current frame for use by the receiving  
4 terminal in ordering the frames of the multi-frame message.

1 7. The method of claim 6, wherein the SMS extension data further  
2 comprises the SMS message number of the SMS message to be used to  
3 convey a frame too long to be conveyed by a single SMS message.

1 8. An apparatus for sending and receiving a signal conveying a  
2 message according to a predetermined message format, but  
3 including information for extending the functionality of  
4 messaging according to the predetermined format, for use when  
5 communicating one or more messages at least in part via a  
6 wireless communication system from a sending terminal to a  
7 receiving terminal, either of which may be a mobile terminal, the  
8 message format providing a user data field, the apparatus  
9 comprising:

10 a) means for sending and receiving the signal conveying the  
11 message; and

12 b) means for inserting extension data into the user data field in  
13 the determined number of bits at the end of the user data field;

14 wherein the extension data includes information indicating  
15 instructions associated with displaying the message, thereby  
16 providing an extension to the messaging according to the  
17 predetermined format that is effective for mobile terminals  
18 adapted to interpret the extension data but does not prevent  
19 mobile terminals not so adapted from displaying the message  
20 without regard for the instructions indicated by the extension  
21 data.

1 9. An apparatus as in claim 8, wherein the message format is for  
2 a message including a picture, wherein each picture message  
3 includes some text associated with the picture, and wherein the  
4 apparatus further comprises:

5 a) means for inserting into the user data field at least some of  
6 the text to be associated with the picture; and

7 b) means for inserting at least some of the picture into the user

8 data field after the text.

1 10. The apparatus of claim 9, wherein the predetermined message  
2 format is the short message service (SMS) picture message format.

1 11. The apparatus of claim 10, wherein the signal conveys an  
2 ordered sequence of SMS picture messages as a single message  
3 object logically organized into frames, each frame consisting of  
4 and conveyed as one or more SMS picture messages, and wherein for  
5 frames consisting of only one SMS picture message, the SMS  
6 extension data is included after the picture in the only one SMS  
7 picture message, but in each frame consisting of multiple SMS  
8 picture messages, the SMS extension data is included after the  
9 picture in the last SMS picture message of the multiple SMS  
10 picture messages making up the frame.

1 12. The apparatus of claim 11, wherein in case a frame is  
2 conveyed by more than one SMS message, the apparatus further  
3 comprises means for inserting SMS message concatenation data into  
4 the user data field of each SMS message used to convey the frame  
5 so as to indicate the individual SMS messages and their order to  
6 be used to convey the frame.

1 13. The apparatus of claim 11, wherein the SMS extension data  
2 comprises: a message identifier and also the order number or  
3 other identifier of the current frame for use by the receiving  
4 terminal in ordering the frames of the multi-frame message.

1 14. The apparatus of claim 13, wherein the SMS extension data  
2 further comprises the SMS message number of the SMS message to be  
3 used to convey a frame too long to be conveyed by a single SMS  
4 message.